

LISTING OF THE CLAIMS:

Claim 1 (Currently Amended): A process for injection-foaming a thermoplastic resin using an injection molding machine having a two-stage compression screw within a cylinder and to which a physical foaming agent is fed at a point midpoint of the cylinder, wherein the screw comprises a first stage and a second stage, and wherein the screw moves forward and backward in the cylinder, comprising:

(1) feeding the physical foaming agent into the cylinder from a storage tank at a pressure lower than storage pressure by a pressure difference between the storage tank and the injection molding machine cylinder;

(2) feeding the foaming agent to the cylinder at a point within a range from the starting point of the second stage of the screw to a point determined by a length nine times the outside diameter of the screw in the direction of injection at the time the screw is caused to advance most forward in the direction of injection, wherein a hollow area in which there is no resin, is present at the second stage of the screw, and wherein the foaming agent is supplied to the hollow area; and

(3) obtaining a foam by reducing the pressure in a cavity of the mold in the injection molding machine to ~~low pressure including practically atmosphere~~ a predetermined pressure, injecting the resin into the cavity, and then expanding the volume of the cavity.

Claim 2 (Previously Presented): The injection foaming process according to Claim 1 wherein the volume of the cavity is expanded by retracting metal plates in the mold after injecting and filling the resin into the cavity.

Claims 3-16 (Canceled)

Claim 17 (Previously Presented): The injection foaming process of Claim 1 wherein the ratio of $L2/L1$, between the depth of the last groove of the first stage of the two-stage compression screw, $L1$, and the depth of the first groove of the second stage of the two-stage compression screw, $L2$, is in the range of 1.2 to 6.

Claim 18 (Previously Presented): The injection foaming process of Claim 2 wherein the ratio of $L2/L1$, between the depth of the last groove of the first stage of the two-stage compression screw, $L1$, and the depth of the first groove of the second stage of the two-stage compression screw, $L2$, is in the range of 1.2 to 6.

Claim 19 (Previously Presented): The injection foaming process of Claim 1 wherein the physical foaming agent is fed to the molding machine at a lower pressure that is not more than 80% of the storage pressure and is in a gas state or in supercritical condition.

Claim 20 (Previously Presented): The injection foaming process of Claim 18 wherein the physical foaming agent is fed to the molding machine at a lower pressure that is not more than 80% of the storage pressure and is in a gas state or in supercritical condition.

Claim 21 (Previously Presented): The injection foaming process of claim 1 further comprising feeding the physical foaming agent through a resin check valve installed at the point of entry of the physical foaming agent.

Claim 22 (Previously Presented): The injection foaming process of claim 20 further comprising feeding the physical foaming agent through a resin check valve installed at the point of entry of the physical foaming agent.

Claim 23 (Currently Amended): The injection foaming process of Claim 1 wherein the physical foaming agent is carbon dioxide, nitrogen or or argon.

Claim 24 (Previously Presented): The injection foaming process of Claim 22 wherein the physical foaming agent is carbon dioxide, nitrogen or argon.

Claim 25 (Previously Presented): The injection foaming process of Claim 1 further comprising feeding a resin into the first stage of the two-stage compression screw, which resin comprises a thermoplastic resin containing as a foaming nucleator 0.1 to 5 wt% of an inorganic filler having an average particle diameter of 0.5 to 10 μ m to the thermoplastic resin and/or 0.01 to 1 wt%, calculated as undecomposed material, of a chemical foaming agent or its decomposed material.

Claim 26 (Previously Presented): The injection foaming process of Claim 25 wherein the inorganic filler is talc, silica, calcium carbonate or barium sulfate.

Claim 27 (Currently Amended): The injection foaming process of Claim 25 [[21]] wherein the chemical foaming agent is a mixture of polycarboxylic acid and hydrogen carbonate at a ratio of 0.1:0.9 to 0.9:0.1 or its decomposed material.

Claim 28 (Currently Amended): The injection foaming process of Claim 25 [[21]] wherein the chemical foaming agent is a mixture of citric acid and sodium hydrogencarbonate at a ratio of 0.1:0.9 to 0.9:0.1 or its decomposed material.

Claim 29 (Currently Amended): The injection foaming process of Claim 25 [[26]] wherein the thermoplastic resin is a polyolefin.

Claim 30 (Previously Presented): The injection foaming process of Claim 1 wherein the mold cavity has a volume initially set at a value lower than the quantity of resin being injected.

Claim 31 (Previously Presented): The injection foaming process of Claim 25 wherein the mold cavity has a volume initially set at a value lower than the quantity of resin being injected.